Third United Nations International Conference on the Peaceful Uses of Atomic Energy

A/CONF.28/A/737
ITALY
February 1964
Submitted in:
ENGLISH and FRENCH

Confidential until official release during Conference

Abstract

GARIGLIANO NUCLEAR POWER PLANT

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The Garigliano station represents one of the first experiences of European utilities in the construction of a large nuclear power plant.

The present report summarized the major problems encountered at the various stages of plant construction and startup, provides comments on the economics and finally illustrates the main results of the tests performed at startup.

The time and place conditions prevailing when the order was placed and in the immediately preceding period greatly influenced the contractual arrangement selected. Today, said conditions are completely changed and it is now possible, on the basis of the acquired experience, to make definite plans for a more up-to-date procedure.

The general analysis of incurred costs indicates that such a new procedure would naturally entail the disappearance or reduction of certain indirect charges, which were automatically accepted in the estimates as a consequence of the selection of the original contract arrangement.

As regards the main results of the plant startup tests, specific reference is made to the primary circuit tests, including diverse recirculating conditions and operating modes, namely single-cycle and dual-cycle.

The fundamental characteristics of the plant were determined on the basis of data collected both under extraordinary conditions and following foreseeable variations of the main parameters.

Thus, the reactor response to load, pressure, cooling flow variations, etc. was analyzed and compared with the data anticipated in the design stage.

The investigation had the twofold purpose of ascertaining that the plant can actually be operated within the expected limits without fear of damaging the fuel elements and other equipment, and of establishing the most advantageous operating conditions.